GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

Contents for Week of December 6, 1937. Vol. XVI. No. 22.

1. China Puts Its Governmental Eggs in Several Baskets
2. Czechoslovakia: Ancient Bohemia Plus
3. Speed Kings of Animal, Insect, and Fish Worlds
4. Modern Maya Live in Shadows of Ancient Temples
5. Eclipses Once Dreaded; Now Eagerly Studied

Photograph by Maynard Owen Williams

PEACOCK FINERY IN "GOLDEN" PRAGUE

This maid in the Czechoslovakian capital wears one of the gay native costumes which are seen more in her country than anywhere else in western Europe. The embroidered apron, lace, and big sleeves are popular throughout the nation, but in the eastern provinces her head shawl would be discarded for a kerchief tied under the chin, a fashion adopted by the modern American miss (Bulletin No. 2).

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents in stamps or money order (in Canada, 50 cents). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

China Puts Its Governmental Eggs in Several Baskets

JAPANESE forces closing in on Nanking have resulted in a scattering of China's governmental eggs into several baskets.

Officially, Nanking is still the capital, and there the Ministry of War will remain. But the Finance, Foreign Affairs, and Communications Ministries have been moved up the Yangtze to Hankow; the executive, legislative, and judicial councils went even farther up the Yangtze to Chungking; and other departments may be sent to Changsha (capital of Hunan province), Yunnan (capital of Yunnan province), and Loyang (northwest of Hankow in Honan province).

Largest and most important of China's "cyclone cellar" capitals is Hankow, which lies about 600 miles up the Yangtze from the East China Sea.

Chungking Is Terminus for U. S. Navy Patrol

About half as large is Chungking, goal of the government's second jump inland. Situated 200 miles above the first of the Yangtze gorges, it is an old walled city with some 600,000 inhabitants. Built at the confluence of the Yangtze and the Kia-ling rivers, it is 1,500 miles from the coast and 1,000 feet above sea level; yet it is listed as a seaport. From its riverside docks small steamers carry varied cargoes down the mighty Yangtze to Shanghai for transshipment abroad. Chief exports are tung oil, bristles, feathers, hides, silks, satins, and crepes. Chungking is the "end of the line" for U. S. Navy gunboats of the Yangtze patrol.

Another possible government refuge is Changsha, capital of hilly Hunan province. The Siang River, on which Changsha is located, flows into the Yangtze at Hankow. Especially important as a channel of communication is the railroad which also links Changsha with Hankow, and Hankow with China's important southern metropolis Canton. Changsha is the center of a rich mining district, with exports of coal, iron, and antimony. It is famous also for its fireworks, some of which are exported to the United States for Fourth of July celebrations.

Brick Tea, Matches, Steel, and Wheat Keep Hankow Busy

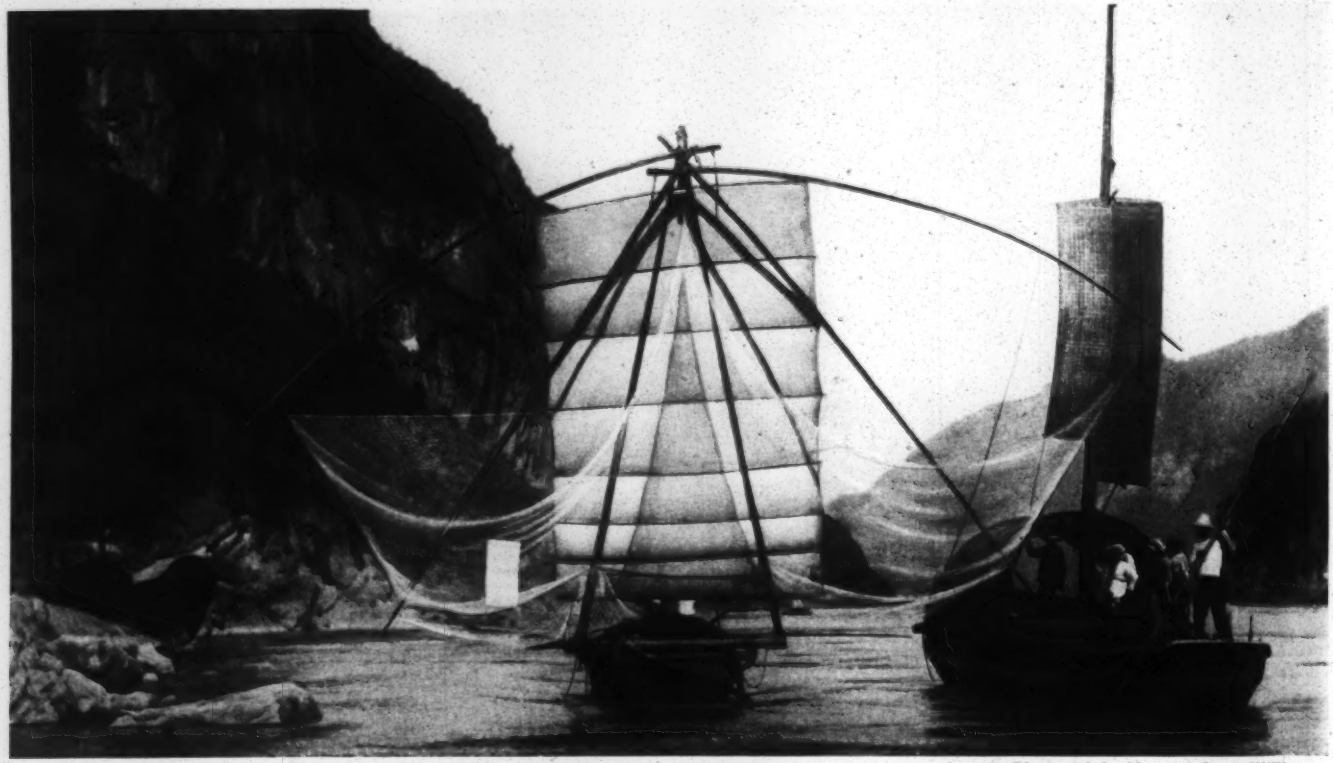
Most important of all China's emergency capitals, of course, is Hankow, which is possibly the country's busiest inland city. In position, as a population center of the interior located on the country's largest river, Hankow on the Yangtze has been compared to St. Louis on the Mississippi. As a distribution hub, it has been called the "Chicago of China." Because it is actually a cluster of cities, separated by river channels, it has been likened to New York City in geographical situation. Greater Hankow consists of the cities of Hankow, Hanyang, and Wuchang. To complete the list of Hankow's American analogies, its climate has been compared with that of New Orleans, and the smoke from steel and iron mills gives it a Pittsburgh atmosphere.

Here are found some of the largest blast furnaces and steel mills in China. The waterfront presents the unexpected spectacle of typical Chinese river junks carrying the typically occidental cargo of steel rails.

This triple city contains about a million and a half people, with almost two-thirds of them in the largest of the triplets, Hankow itself.

Since 1861 when Hankow was opened to foreign trade, it has developed the usual international waterfront which foreign concessions have created everywhere in China, as much alike as if planned by the same pattern. A broad riverside drive called the Bund is its main stem, with modern docks and antiquated native craft on

UMI



Photograph by Maynard Owen Williams

FAR UP THE YANGTZE CHINA'S GOVERNMENT HAS TAKEN REFUGE

Although Hankow is thoroughly modern in many ways, it is not far from the back country of China and the rugged scenery of the Yangtze gorges. River traffic through the gorges is made dangerous by rapids. The small junk, with its tiny patch of matting sail, and the moored junks near the bank on the left are typical of the Yangtze vessels in this neighborhood. A fish net far larger than the topheavy boat is used here and elsewhere throughout China. The whole framework is lowered into the water, then hauled up—the operator hopes—full of fish. Farther upstream lies Chungking, another "emergency capital" (Bulletin No. 1).

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Czechoslovakia: Ancient Bohemia Plus

WITH European countries lining themselves up in two columns—the anti-Communism axis and the anti-Fascism axis—news reports point out a hub of trouble around which both axes may start spinning in a wheel-of-fortune to upset Europe's balance of power and peace. Czechoslovakia is coming more and more into the limelight as a question mark among nations.

Germany criticizes Czech treatment of German-speaking citizens of Czechoslovakia, France hints of resenting German threats to the Czechs, and the rest of Europe is bound by treaty ties to a follow-the-leader policy on one side or the other.

Most of the German-speaking people in question are not former citizens of Germany, but of pre-war Austria. When the Austro-Hungarian empire crashed in 1918, Czechoslovakia picked up some of the pieces. As a result, the relatively new patchwork republic consists of seven different nationalities within a single national boundary. Since the Czechs are dominant, it simplifies discussion to subdue their strange spelling with the easy English pronunciation, "check."

"Ruthenians" a Coined Name

Since Czechs and Slovaks joined hands for a majority (six million plus three million) over smaller groups comprising the rest of the 15 million inhabitants, they gave the name of Czechoslovakia to their country, or Ceskoslovenska when talking about it themselves. The three million German-speaking citizens outnumber Czech-speaking neighbors in some regions, especially the western province of Bohemia. In the province made up of Moravia and Silesia, Czechs and Slovaks have been joined by a sizable settlement of Poles from the northeast.

Slovakia itself has a minority of Magyars, who are called Hungarians across the southern border. Quite complicated is the far eastern province of the Ruthenians whose name had to be invented to avoid calling them Russians. Among them live their former rulers, the Hungarian Magyars, their present governors, the Czechs, a sprinkling of Romanians from the south, and clusters of Jews and gypsies.

These varied groups of citizenry do not fit into Czechoslovakia like a neat mosaic, nor even like a jigsaw puzzle. The mixture is as intricate as the interlocked fingers of clasped hands. Each group clings to its own language, favorite foods, dress fashions, and church services. When the government began to issue banknotes, each note repeated its message of credit in six languages: Czech, Slovak, German, Magyar, Polish, and Ruthenian.

The four provinces are lined up side by side, making a long thin country averaging between 50 and 100 miles wide for most of its 600-mile length. Czechoslovakia is almost as extended as Italy, with half that country's area and none of its sea-circled isolation. Five neighbors surround the Czechs' strategic strip of Central Europe: Germany, Poland, Austria, Hungary, and Romania.

Bohemian Sea Coast Only in Fiction

Four seas are within 300 miles—Baltic, Black, Adriatic, and North Seas—but Czech trade abroad is dependent on foreign railroads or the international waters of the Elbe and Danube Rivers. Shakespeare's seacoast in Bohemia, of course, does not exist.

Medieval Bohemia is both the heart and head of modern Czechoslovakia. The republic of today ripped free an ancient nation that had been tied to the chariot wheels of the Austro-Hungarian Empire in spite of a national existence dating back to the 9th century. Bohemia split away from the Great Moravian Empire in the Dark Ages, choosing the Christianity of western Europe instead of the pagan mysteries of the Slavic east. In the 14th century a Bohemian king was Charles IV, Czech Emperor of Germany.

From the province of Moravia came the religious revolt of the Moravian Brothers, who have sprinkled the United States with immigrant bands. Hope of political revolt inspired the gymnastic Sokols, to keep Czechs physically fit to fight for freedom.

So many Czechs had migrated to America that the first move for Czechoslovakia's independence from Austria-Hungary was a pact of May, 1918, signed in Pittsburgh. The railway station in Prague is named for Woodrow Wilson, whose Versailles Treaty influence authorized Czechs to rebuild their ancient nation.

"City with the Hundred Towers," as Prague is called, has figured in European history since the rule, ten centuries ago, of "Good King Wenceslaus" of Christmas carol fame. The

UMI

one side and occidental banks, hotels, business offices, and consulates on the other. In the same landscape, as usual, are distant rows of concrete "go-downs," the warehouses which feed foreign trade.

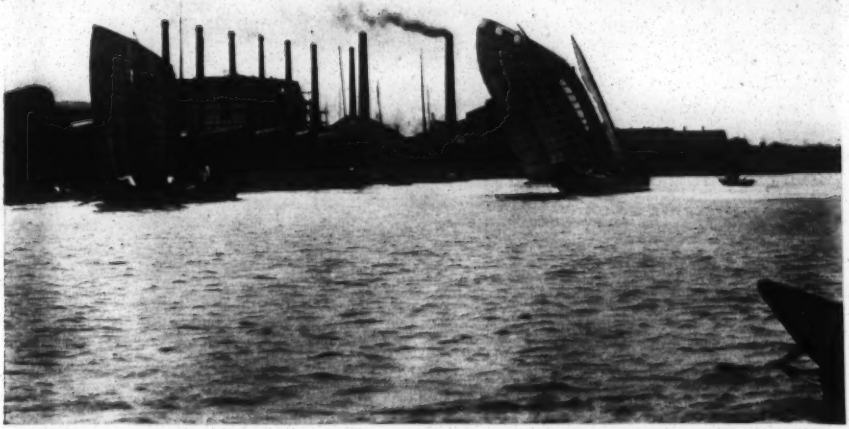
Fairly modern manufacturing methods prevail in Hankow, but the products are by no means exclusively modern. A staple Hankow export is brick tea, which has for centuries been the preference of Mongolians, western Chinese, and eastern Russians. When powdered tea is pressed into bricks, it is easier to carry and to preserve for tea-sippers in remote parts of Central Asia. Matches, tobacco, wheat flour, albumen from duck and hen eggs, and other food products are the basis for some of Hankow's big business. Modern spinning machines make cloth of cotton, silk, and hemp. Embroidery, woodwork of bamboo or lacquered woods, and paper-making help to keep Hankow's million busy.

Many of the million earn their living by being human machines, furnishing man power for loading ships, propelling motorless junks, or carrying water in the native city. Up-to-date water system and electricity are conveniences of the foreign concessions and well-to-do Chinese mainly.

Wuchang, one-third of "Greater Hankow," is in its own right the capital of Hupeh province.

Note: Descriptions of China's new "seats of government" and of other points of interest in this Far Eastern Republic will be found in the following: "Landscaped Kwangsi, China's Pictorial Province," *National Geographic Magazine*, December, 1937; "Changing Shanghai" and "Peacetime Plant Hunting Around Peiping," October, 1937; "Grand Canal Panorama," April, 1937; "Approach to Peiping," February, 1936; "Coastal Cities of China," November, 1934; "From the Mediterranean to the Yellow Sea by Motor," November, 1932; "Cosmopolitan Shanghai, Key Seaport of China" and "Macao, Land of Sweet Sadness," September, 1932; "Raft Life on the Hwang Ho," June, 1932; "How Half the World Works," April, 1932; "Ho for the Soochow Ho," "The Geography of China," "Life Afloat in China," and "New China and the Printed Page," June, 1927; and "Farmers Since the Days of Noah," April, 1927.

Bulletin No. 1, December 6, 1937.



Photograph by Dr. Robert F. Fitch

JUNKS PARADE BEFORE MODERN INDUSTRY AT HANKOW

China's emergency capital, although 600 miles from the sea, is one of the Republic's busiest ports. Between ungainly junks with sails of straw, reed, or bamboo matting dart small sampans moved by the muscle power of perspiring coolies. It is estimated that 25,000 native boats ply in and out of Hankow and its two sister cities. Steamers link Hankow with Nanking and Shanghai, and with cities farther up the Yangtze.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Speed Kings of Animal, Insect, and Fish Worlds

WHEN you yell "Wait!" you expect your yell to catch up with the yelled-at person sooner than you could. But the useful speed of sound is exceeded by the flight of an insect, according to a scientist who timed the flight with a camera shutter. Racing results: Sound, 1,089 feet per second, or a mile in five seconds minus; Insect, 1,200 feet per second, or at the rate of a mile in four seconds plus. Winner: Insect, otherwise known as a species of deer bot fly.

The idea of an insect flitting faster than its buzz is a wild one, subject to taming by more scientific clocking. Meanwhile the deer bot fly remains the speed champion of the world. Its speedometer would register about 800 miles per hour, if it had a speedometer and could fly for a solid hour. Man's swiftest inventions would be "also rans"; the airplane trailing along at about 400 m.p.h., and the racing auto at 300 m.p.h.

Animals' Speed Admired for Many Centuries in Races

Wings are a symbol for velocity, and nature awards her speed records to flying creatures. The duck hawk, next to that streak-of-lightning insect, has been timed as the fastest living thing on wings. The speed of its cousin in the Eastern Hemisphere, the Peregrine Falcon, made it the ideal hunting hawk because it always overtook its prey. Other fliers, which have such effectiveness in flight as to be the warplanes of the bird world, are the eagle and the vulture. The well-named swift is one of the swiftest. The swallow, too, is an exceedingly rapid flyer.

Wings also give speed to what has been called the fastest finned creature—the flying fish. It can "take off" with its tail and spread its fins for gliding in the air rapidly enough to escape becoming fish food for its swimming enemies.

Flying feet give speed to animal racers, such as the antelope, the gazelle and the deer. To overtake them man had to use arrows and bullets. The ostrich, the emu, and the giraffe, too, can almost fly on foot, usually outdistancing a horseman. The value of the hunting dog is its rapid pursuit of the rabbit, the fox, and the wolf, all of them speedy creatures.

Cheetah Racing Latest Sport Thrill

Racing for fun and not for food is the job occasionally given to man's domestic animals, the horse and the dog. Whippets can reach a track speed of a mile in two minutes, and the greyhound can do as well or better (illustration, next page). For short distances a horse can race about 40 miles an hour. Because the racingest human has achieved only half that speed, man has never ceased to marvel at a horse race.

The cheetah, however, has been clocked as the fleetest animal runner, so now it takes its place as the newest racing thrill. Several cheetahs, which resemble long-legged leopards, are being imported from East Africa to England for race fans, adding a novelty to the list of dog races, pigeon races, and even camel, frog, and pig races.

In long-distance runs cheetahs become winded, but for short dashes, of an eighth or a quarter of a mile, they can outdistance all other animals. Cheetahs can streak past a horse, outrun a greyhound bounding along at 45 miles an hour, and can travel two yards to one of the swift Indian antelope.

Related to leopards, and sometimes called "hunting leopards," cheetahs have tawny bodies spotted with black, but the spots are small and round unlike the more

UMI

widely sung ruler is buried in the Cathedral of St. Vitus, full-sized Gothic church inside the courtyard of Prague's huge 700-room Palace of the Emperors.

Perhaps next in importance to Prague is the obscure village of Slavkov. Napoleon, as he rode away victorious from the momentous "Battle of the Three Emperors," called it Austerlitz. If more were known of political secrets of fallen empires, greater importance might be attached to the secluded Konopiste château, south of Prague. It was visited on June 12, 1914, by Wilhelm, then Kaiser of Germany. Ten days later the owner, Archduke Ferdinand, took a farewell look at his rose garden and started on a southern trip which was interrupted by an assassin's bullet in Sarajevo—the spark that fired the World War.

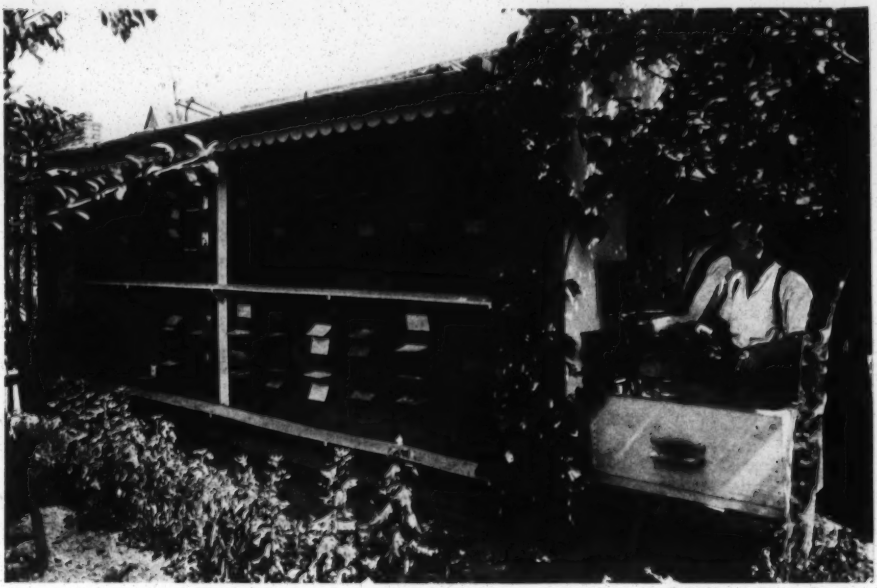
Czech Words and Music Popular in U. S.

Prague is now involved in an international war of commerce. From there westward stretches one of the biggest industrial areas in Europe, thick with steel and cotton mills, machine shops, and the huge Skoda munitions works. Mines feed them with copper, tin, manganese, and coal. Silver and uranium are among Czech resources, and the country's eastern end contains the richest opal mines in Europe.

Czech culture gave the world an overworked word, "Bohemian," meaning a free and easy devotee of the arts. Modern civilization owes another word to Czechoslovakia—"robot," which the Czech dramatist Capek popularized to mean an automaton. Czech drama has invaded world music with Smetana's merry opera, "The Bartered Bride." Even more popular is the music of Czechoslovakian Dvorák, whose compositions tinge orchestra and radio everywhere with Slav heartbreak.

Note: Additional photographs and information about Czechoslovakia may be found in "When Czechoslovakia Puts a Falcon Feather in Its Cap," *National Geographic Magazine*, January, 1933; "Danube, Highway of Races," December, 1929; "Hospitality of the Czechs," June, 1927; "The Battle-line of Languages in Western Europe," February, 1923; "The New Map of Europe" and "Czechoslovakia—Key-Land to Central Europe," February, 1921; "Races of Europe," December, 1918; and "Bohemia and the Czechs," February, 1917.

Bulletin No. 2, December 6, 1937.



© *Publishers' Photo Service*

A CZECH BEE HIVE—NOT AN OUTDOOR POST OFFICE!

Factories, population pressure, and education thin out in Czechoslovakia from west to east. Fully half the country is under cultivation now, since large estates have been redistributed from former landlord nobles to the peasants. At one time 33 noblemen held one-sixth of a province in which millions lived. The country is now one of Europe's leading producers of sugar beets, but even larger is the crop of potatoes, which are staple peasant food. Grain crops are rye, wheat, barley, and buckwheat. The buckwheat fields turn out honey as a by-product, which bees store in these neat hives.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Modern Maya Live in Shadows of Ancient Temples

ONE of the largest collections of Maya art ever assembled in one place is being exhibited in the Baltimore Museum of Art. With the help of the Carnegie Institution, which has been studying the ancient Maya civilization in Mexico for many years, the collection was brought together from many sources.

The modern Maya, who still comprise nearly half the population of the Yucatan peninsula, are cheerful, friendly folk, endowed with more likable qualities than perhaps any other American Indian people. While they are no longer temple builders, sculptors, or scientists on the grand scale, their modest homes, simple dress, dances, and religious ceremonies reveal an innate culture of long standing.

One of Handsomest Native Races in America

The Maya today is short in stature, the men averaging about five feet one inch and the women only four feet eight inches. All Maya have exceedingly broad heads, which is probably their most marked physical characteristic; their hands and feet are small and beautifully formed.

Add to this eyes nearer black than brown, a strong, well-formed Roman nose, an equally well-formed, expressive mouth, and a skin of dark, golden brown, with warm high lights, and you have one of the handsomest native races in America. They are cheerful, friendly, not quarrelsome, exceedingly clean, home-loving, and, when the need arises, industrious.

The Maya home in the rural districts of Yucatan consists of a palm- or grass-thatched hut with sides of saplings, which may or may not be daubed with mud. These are rectangular, with rounded ends, usually about 25 feet long, 10 to 12 feet wide, and 15 feet high to the ridge-pole of the steeply sloping roof. Murals in the Temple of the Jaguar at Chichen Itzá depict dwellings of this type in use centuries ago.

Hammocks Used for Beds

There are no windows in typical houses and only two doorways, one in the middle of each of the long sides, directly opposite each other. Doors usually are made of woven withes. Directly behind the house is a lean-to, the *koben,* which serves as the kitchen and the laundry (illustration, next page). The house proper has only one room.

Furniture comprises hammocks, which are rolled up on the rafters during the day, a few low comfortable stools, and a table with the figure or painting of a saint. Everybody sleeps in this combination living room, bedroom, dining room, and chapel, frequently two to a hammock, with the dogs lying beneath and occasionally a setting hen in a corner. The men and boys of the family eat in the main house, and the women and girls in the kitchen.

Raising food is still the chief job of the agricultural Maya people, but food for them hasn't far to go from field to kitchen. They live mainly on corn, which they have cultivated at their very dooryards for centuries. Three-fourths of the Maya diet is cornmeal made into tortillas. After the housewife has ground the meal from corn kernels with a stone rolling-pin on a flat stone surface, meal and water are patted into a flat round cake on a banana leaf, and cooked by the half-dozen on a flat iron platter. One meal for one person averages about twenty tortillas.

UMI

varied markings of leopards. They purr like pumas, and sometimes actually chirp like birds. Strangely, these "cats" have several doglike characteristics. They sit high on their haunches as dogs do, and their blunt claws are only partly retractile, instead of slipping back completely into their sheaths as do claws of cats or lions. They also become docile pets.

Cheetahs inhabit the open plains of Africa and southern Asia. Ancient sculptures show that the Assyrians and Egyptians used the animals in hunting. For centuries they have been trained in India and Persia to capture antelopes.

Rewarded after Chase

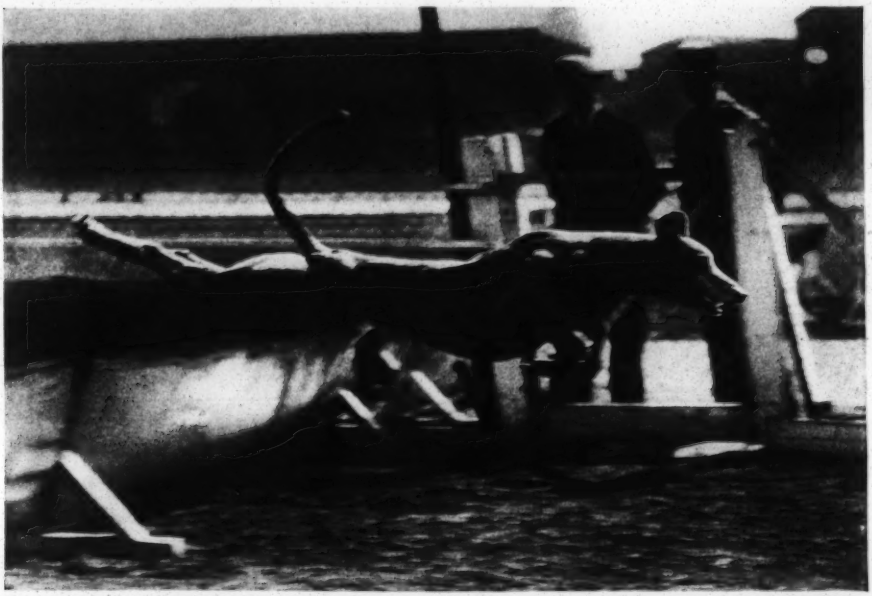
Since young cheetahs cannot be trained to pursue game, only mature specimens are captured. Fierce and hostile at first, they are made submissive by the strange procedure of depriving them of food, sleep, and peace. After they have been scolded and teased for some time they become docile as house cats. Frequently they share the beds of their native trainers.

In India, it has been the custom to take a cheetah hooded and chained in a cart to within about 200 yards of a herd of antelopes. Then the hood is removed, the chain loosed, and the animal streaks across the plain in pursuit of his quarry. Overtaking it, he pulls it down, kills or holds it till the hunters arrive. The cheetah is then given a ladle of the antelope's blood as a reward, after which he is hooded again, and rechained. If ever loose and disobedient, he will usually return immediately if the keeper merely holds out the wooden ladle.

Note: The Bot Fly Family, of which the world's fastest insect, the deer bot fly, is a member, is described in "Our Insect Friends and Foes and Spiders," one of the National Geographic Society's series of Nature books. A folder describing these publications will be sent upon request.

See also "Adventures with Birds of Prey," *National Geographic Magazine*, July, 1937; and "Man's Oldest Ally, The Dog," February, 1936.

Bulletin No. 3, December 6, 1937.



© *Fox Photos*

CANINE SPEED KING KNOWS ALL ABOUT FLYING EXCEPT HOW TO USE WINGS

A racing greyhound streaks through the air with the greatest of ease at a track near London. For swiftness he ranks high among wingless creatures, although he has not had the advantage of centuries of careful breeding for speed that the race horse has.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Eclipses Once Dreaded; Now Eagerly Studied

"A SQUIRREL is eating up the sun!" the Choctaw Indians used to lament at an eclipse. Even during the past century, an eclipse was in some places believed to foretell the end of the world. But on December 2 occurred the third eclipse during 1937, with a minimum of panic. It was the 4,610th since the beginning of the Christian Era.

Study instead of superstition is the modern attitude toward this heavenly lights-out. The National Geographic Society-U. S. Navy Expedition to Canton Island in the Pacific last June was typical of man's efforts today to go far out of his way to observe the sun's total eclipse. The less spectacular eclipses of the moon on November 18 and the sun again on December 2 were also studied.

Eclipse Fears Played a Part in History

When the sun-earth-moon eclipse line-up is not perfectly straight, some light reaches the moon, and that orb is only partially eclipsed, as on the morning of November 18. The eclipse of the sun of December 2, visible over the Pacific and in western North America, was annular. The distances of sun and moon from the earth made the moon appear too small to obscure the whole sun, just as a penny is too small to cover a quarter. The moon appeared as a black disc in front of the sun, but a dazzling rim of the sun's surface was still visible around it. This exposed ring, or annulus, was about one-hundredth of the sun's total area.

By explaining such spectacles, science is freeing the world from terror that once gripped beholders when nature turned off the light of sun or moon. This terror was turned to account by Mark Twain's Connecticut Yankee, who subdued King Arthur's court single-handed by "causing" the eclipse of June 21, 528 A. D. This fictitious sun-darkener has had many a model in real life, even in the United States. The Indian evangelist of the Ghost Dance cult convinced Cherokee and Creek tribesmen of his special "pull" in heaven by exploiting the eclipse of 1806. In the 1880's the western Indian prophet Smohalla bolstered his claims to supernatural authority among tribes of Washington and Oregon by predicting eclipses from the Nautical Almanac.

Sun Bitten By Assorted Livestock; or "A Pig in the Sun's Eye"

One eclipse stopped a war. After six years of fighting, the Medes and the Lydians on May 28, 585 B. C., saw the sun turn black and the day change into night; immediately the terrified armies made a hasty peace.

Old Sol took a hand in ancient history again when the Persians were besieging the strong-walled Medean city of Larissa. The fortified wall was 100 feet high and 25 feet thick, and the Persians on the outside were in despair. Then the sun withdrew its light in an eclipse, the inhabitants withdrew from Larissa in alarm, and the Persians marched unopposed into a silent and empty city.

Most primitive peoples, seeing the sun's disc darken like a cookie being nibbled away, feared that their source of light and warmth was being gobbled up by some gigantic monster. For the Cocopa Indians it was a huge lizard. In Arabia there lingered the legend that a fish attacked the sun; the Indians around Nootka Sound insisted that it was a great codfish. Early Estonians, Armenians, Norsemen, Finns, Yugoslavians, and other peoples agreed on the sun-eating animal, but described it variously as a dragon, a serpent, Managarmar the moondog, or possibly a *vukodlak*, a sinister spirit enchanted into the form of a wolf.

UMI

Another native food is the papaya, which grows as large as a watermelon and has the coloring but not the flavor of a cantaloupe.

Farm Machinery Consists of Wooden Stick Only

Farming efforts of the Maya are still quite primitive. With a wooden stick they make a hole in the earth for each seed, and when weeds threaten to choke out the corn there is no implement for hoeing them out. It seems simpler to the Maya to move away than to wrestle with the weeds; so he burns off another clearing and plants a fresh cornfield.

Perhaps it was in order to make the best use of primitive farming methods that the ancient Maya began to study the progress of the seasons and to develop the calendar system for which they are famous. By marking the passage of time, they could know exactly when their forest clearings should be made, at what season the corn planting should take place, and when to expect the harvest.

Note: For over two decades the National Geographic Society has reported the progress of expeditions to unearth the history and culture of the Maya. Accounts of these expeditions and additional descriptive material about the Mayan life are contained in "Yucatan, Home of the Gifted Maya," *National Geographic Magazine*, November, 1936; "Guatemala Interlude," October, 1936; "Preserving Ancient America's Finest Sculptures," November, 1935; "Unearthing America's Ancient History," July, 1931; "Guatemala, Land of Volcanoes and Progress," November, 1926; "Chichen Itzá, an Ancient American Mecca," January, 1925; "The Foremost Intellectual Achievements of Ancient America," February, 1922; "The Home of a Forgotten Race," June, 1914; and "Excavations at Quirigua, Guatemala" and "Mysterious Temples of the Jungle," March, 1913.

Bulletin No. 4, December 6, 1937.

Photograph by E. L. Crandall

WOODEN WASHTUB AND WHITE DRESS HAVE FREQUENT GET-TOGETHERS

In the subtropical Yucatan peninsula of Mexico, cool white "Mother Hubbard" dresses, with white petticoat drooping below, are popular with the Maya women of today. Less popular but equally necessary is the shallow basin carved from solid wood, tilted for saving water and sheltered with thatch roof for the laundress' comfort. The flat end projecting at the right serves as drainboard and scrubbing board. Maya, since before the coming of the white man, are among the cleanest and handsomest of native Indian races.

A theory once popular along the Nile was that the sun was the eye of the god Horus. Like any other eye with a cinder in it, the eye of Horus closed when irritated. But no mere cinder could cause enough eye-closing for an eclipse. That would require as irritant no less than that unpopular animal the pig.

Among some North American Indian tribes the word for eclipse can be freely translated "frog swallows." Guided by medicine men, they raised a great clamor to frighten the frog, so that it would hop off into another part of the sky. In Latin America, especially Mexico, the sun's enemy was an enchanted jaguar.

In China the "eating of the sun" is a bad omen; New Year's Day in 1850 was postponed twenty-four hours to avoid starting with an eclipse.

Throughout southeastern Asia, to prevent the sun's being permanently injured by the eclipse beast, there are ceremonies, missiles thrown skyward, and a tremendous din of gongs, drums, and cymbals to frighten the monster away.

As recently as 1820, a textbook was still informing United States school children that they must no longer fear eclipses' connection with future events.

Note: A diagram explaining the positions of earth, moon, and sun during an eclipse appears in "Photographing the Eclipse of 1932 from the Air," *National Geographic Magazine*, November, 1932.

Additional articles about eclipses are: "Nature's Most Dramatic Spectacle" and "Eclipse Adventures on a Desert Isle," *National Geographic Magazine*, September, 1937; "Observing an Eclipse in Asiatic Russia," February, 1937; "Observing a Total Eclipse of the Sun," November, 1932; and "Interviewing the Stars," January, 1925.

Bulletin No. 5, December 6, 1937.

Photograph courtesy Mrs. George Harrington

TINY CRESCENTS APPEAR WHEN THE ECLIPSED SUN "PRINTS" ITS OWN PICTURE

The solar eclipse of August 31, 1932, was in progress when this picture was taken on Long Island, New York. Only a small crescent of the sun still was visible beyond the obscuring moon. On the same principle by which light enters a small camera aperture and records a picture, the light from the sun passed through small holes between the leaves and outlined on walls, walks, and grass the bright crescent from which it came.

UMI